

(FILE 'HOME' ENTERED AT 14:54:41 ON 30 APR 2005)

FILE 'CAPLUS' ENTERED AT 14:55:15 ON 30 APR 2005
S 141-78-6/REG#

L1 FILE 'REGISTRY' ENTERED AT 14:56:28 ON 30 APR 2005
1 S 141-78-6/RN

L2 FILE 'CAPLUS' ENTERED AT 14:56:28 ON 30 APR 2005
25984 S L1

L3 FILE 'REGISTRY' ENTERED AT 14:56:45 ON 30 APR 2005
1 S 141-78-6
L4 1 S 141-78-6/RN

L5 FILE 'CAPLUS' ENTERED AT 14:57:08 ON 30 APR 2005
1568 S 141-78-6/PREP
L6 2513 S 141-78-6/PROC
L7 3974 S L5 OR L6
L8 564 S L7 AND ETHANOL AND ACETIC ACID
L9 34 S L8 AND SILICA
L10 0 S L9 AND HETEROPOLYACID
L11 1 S L9 AND HETEROPOLY ACID
L12 23 S L9 AND CATALYST
L13 13 S L12 AND PY<2000

141-78-6

L3 1 141-78-6
(141-78-6/RN)

=> s 141-78-6/rn

L4 1 141-78-6/RN

=> d

L4 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2005 ACS on STN

RN 141-78-6 REGISTRY

ED Entered STN: 16 Nov 1984

CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Acetic acid, ester with EtOH (7CI)

OTHER NAMES:

CN Acetic acid, ethyl ester

CN Acetic ether

CN Acetidin

CN Acetoxyethane

CN Ethyl acetate

CN Ethyl ethanoate

CN EtOAc

CN NSC 70930

CN Vinegar naphtha

FS 3D CONCORD

MF C4 H8 O2

CI COM

LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS,
BIOTECHNO, CA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS,
CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHM, CSNB, DDFU, DETHERM*,
DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2,
GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*,
MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, PS, RTECS*,
SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL,
VETU, VTB

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

Et-O-Ac

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

25948 REFERENCES IN FILE CA (1907 TO DATE)

156 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

25984 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d 1-13 ibib abs hitstr

L13 ANSWER 1 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:760399 CAPLUS

DOCUMENT NUMBER: 132:53987

TITLE: VOC removal: investigation of ethylacetate oxidation over supported Pt catalysts

AUTHOR(S): Papaefthimiou, P.; Ioannides, T.; Verykios, X. E.

CORPORATE SOURCE: Department of Chemical Engineering, University of Patras, Patras, GR-265 00, Greece

SOURCE: Catalysis Today (1999), 54(1), 81-92

CODEN: CATTEA; ISSN: 0920-5861

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Oxidation of ethylacetate in trace amts. in air was studied over supported Pt catalysts. Steady-state kinetic expts. showed that Pt dispersed on W6+-doped TiO₂ was the most active **catalyst**. **Acetic acid** and acetaldehyde were the main byproducts at low and intermediate conversions. Temperature-programmed desorption (TPD) and oxidation (TPO) of labeled ethylacetate, (13CH₃13COOCH₂CH₃), as well as differential scanning calorimetry (DSC) of ethylacetate, NH₃, and CO₂ were used to obtain information on surface processes occurring under heating in inert or oxidizing atmospheric and on the acidic/basic character of the support surfaces. The high activity of the Pt/TiO₂ (W6+) **catalyst** under steady-state conditions is attributed to the presence of a large number of acidic sites with appropriate strength on the TiO₂ (W6+) surface, leading to the formation of a large pool of highly mobile reactive intermediates.

IT 141-78-6, Ethylacetate, processes

RL: PEP (Physical, engineering or chemical process); POL (Pollutant); REM (Removal or disposal); OCCU (Occurrence); PROC (**Process**)

(temperature effect on volatile organic compound removal from air by oxidation following adsorption on tungsten-doped, supported platinum catalysts)

RN 141-78-6 CAPLUS

CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 2 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:402243 CAPLUS

DOCUMENT NUMBER: 131:171839

TITLE: Study of Rh-Sm-V-Li/SiO₂ **catalyst** for CO hydrogenation reaction to C₂-oxygenates

AUTHOR(S): Zhang, Wei; Luo, Hongyuan; Zhou, Huanwen; Wu, Zhihua; Huang, Shiyu; Liu, Chongzao; Chu, Huiping; Lin, Peizi; Lin, Liwu

CORPORATE SOURCE: Dalian Inst. Chemical Physics, The Chinese Academy Sciences, Dalian, 116023, Peop. Rep. China

SOURCE: Cuihua Xuebao (1999), 20(3), 285-289

CODEN: THHPD3; ISSN: 0253-9837

PUBLISHER: Kexue Chubanshe

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB Rh-Sm-V-Li/SiO₂ **catalyst** for CO hydrogenation reaction under pressure was studied by TPR, adsorption of CO and H₂, and H₂-TDP. The addition of Sm, V and Li to Rh/SiO₂ improved the activity and selectivity for C₂-oxygenates. The yield of and selectivity for C₂+oxygenates can reach 361.7 g/(kg·h) and 59.1% on 1% Rh-0.5% Sm-0.5% V-0.01% Li/SiO₂ **catalyst**, resp. The Sm³⁺ ions on the **catalyst** are difficult to be reduced and thus improved the dispersion of Rh, increasing the uptake of CO and H₂ and promoting the formation of **acetic acid** and acetaldehyde. The vanadium ions with higher valence on

the **catalyst** are easy to be reduced to those with lower valence, migrate on the Rh surface, and decrease the uptake of CO and H₂. The V with lower valence had good storage capability for H₂, enhanced the ability for hydrogenation and promoted the formation of EtOH.

IT 141-78-6P, Ethyl acetate, preparation
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(Rh-Sm-V-Li/SiO₂ **catalyst** for hydrogenation of CO to C₂-oxygenates)
RN 141-78-6 CAPLUS
CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

L13 ANSWER 3 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:402230 CAPLUS

DOCUMENT NUMBER: 131:171836

TITLE: A study of CO hydrogenation to C₂-oxygenates on Rh-Sm/SiO₂ **catalyst**

AUTHOR(S): Zhang, Wei; Luo, Hongyuan; Zhou, Huanwen; Wu, Zhijua; Huang, Shiyu; Liu, Chongzao; Chu, Huiping; Lin, Peizi; Lin, Liwu

CORPORATE SOURCE: Dalian Inst. Chemical Physics, The Chinese Academy Sciences, Dalian, 116023, Peop. Rep. China

SOURCE: Cuihua Xuebao (1999), 20(3), 259-262
CODEN: THHPD3; ISSN: 0253-9837

PUBLISHER: Kexue Chubanshe

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB Rh-Sm-V/SiO₂ **catalyst** for CO hydrogenation under pressure was studied by temperature-programmed reduction, adsorption of CO and H₂, and temperature-programmed desorption of adsorbed H₂. The Sm addition improved the activity of the **catalyst** and selectivity for C₂-oxygenates. CO conversion of 3.38% can be obtained on 1% Rh-0.5% Sm/SiO₂, compared to 1.72% on 1% Rh/SiO₂. The yield of and selectivity for C₂-oxygenates formation were increased from 37.4 to 176.1 g/(kg·h), and from 22.3% to 53.9%, resp., under the conditions of reaction temperature 583 K, pressure 3.0 MPa and GHSV 13,000 h⁻¹. TPR profile of Rh/SiO₂ and Rh-Sm/SiO₂ gave the same area of the reduction peaks. In comparison with 1% Rh/SiO₂, the n(H)/n(Rh) and n(CO)/n(Rh) were increased from 0.42 to 0.90, and from 0.67 to 0.81 on 1% Rh-0.5% Sm/SiO₂, resp. The Sm³⁺ ion on Rh-Sm/SiO₂ catalysts was difficult to be reduced; it played a role of improving the dispersion of Rh, increasing the adsorption of CO and H₂, and promoting the formation of **acetic acid** and acetaldehyde.

IT 141-78-6P, Ethyl acetate, preparation
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(CO hydrogenation to C₂-oxygenates on Rh-Sm/SiO₂ **catalyst**)

RN 141-78-6 CAPLUS

CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

L13 ANSWER 4 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:627964 CAPLUS

DOCUMENT NUMBER: 129:205166

TITLE: Fuel cell hydrogen production by catalytic **ethanol**-steam reforming

AUTHOR(S): Amphlett, J. C.; Leclerc, S.; Mann, R. F.; Peppley, B. A.; Roberge, P. R.

CORPORATE SOURCE: Royal Military College of Canada, Kingston, ON, K7K 7B4, Can.

SOURCE: Proceedings of the Intersociety Energy Conversion

Engineering Conference (1998), 33rd,
IECEC269/1-IECEC269/7
CODEN: PIECDE; ISSN: 0146-955X
Society of Automotive Engineers
Journal; (computer optical disk)
English

PUBLISHER:
DOCUMENT TYPE:
LANGUAGE:

AB It is clear that the reaction network that results from catalytic reaction of **ethanol**, with and without steam, is very complex and involves over a dozen potential products. Reactions to avoid are any that lead to C4 species and ethylene - the former representing a more difficult challenge for subsequent steam reforming and the latter providing what is probably the major route to carbon production and "coking" of the **catalyst**. Dehydration reactions, therefore, should generally be avoided. Dehydrogenation catalysts would seem to be most appropriate, especially since the production of hydrogen is the main goal. Copper-based catalysts have been long-established for this function so that they are com. available and therefore lower cost. CuO/ZnO, CuO/SiO₂, CuO/Cr₂O₃ or CuO/NiO/SiO₂ may be the best **catalyst** candidates. Reaction pressures should be relatively low (1 to a few atm) and the best reaction temperature could be in the range 350 to 450°. Insufficient exptl. work has been reported to give a clear idea of the required water-to-**ethanol** mole ratio. The stoichiometric value of this ratio is three and it is likely that excess water, although presenting some process complications, will be necessary to minimize yields of CO and CH₄. A major new aspect of **catalyst** selection and operation, when comparing **ethanol** to methanol steam reforming, will be **catalyst** deactivation due to temperature

IT 141-78-6P, Ethyl acetate, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(fuel cell hydrogen production by catalytic **ethanol**-steam reforming)

RN 141-78-6 CAPLUS

CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 5 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:764000 CAPLUS

DOCUMENT NUMBER: 128:79133

TITLE: Performance of doped Pt/TiO₂ (W6+) catalysts for combustion of volatile organic compounds (VOCs)
AUTHOR(S): Papaefthimiou, Panagiotis; Ioannides, Theophilos; Verykios, Xenophon E.

CORPORATE SOURCE: Department of Chemical Engineering, University of Patras, GR-26500 Patras, Greece

SOURCE: Applied Catalysis, B: Environmental (1998), 15(1-2), 75-92

CODEN: ACBEE3; ISSN: 0926-3373

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The oxidation of benzene and ethylacetate in air over Pt supported on γ -Al₂O₃, SiO₂, TiO₂ and TiO₂ (W6+) carriers was studied. It was found that doping of the TiO₂ support with W6+ cations has a pos. effect on the activity of Pt catalysts for benzene and ethylacetate oxidation. A maximum in activity enhancement was observed at a W6+ content of 0.45 atomic% in the TiO₂ support. The Pt/TiO₂ (0.45 atomic% W6+) **catalyst** is over 2 orders of magnitude more active than the Pt/ γ -Al₂O₃ **catalyst** in the case of ethylacetate oxidation and 1 order of magnitude more active in the case of benzene oxidation. Doping of TiO₂ with W6+ cations enhances its activity for ethylacetate degradation towards smaller organic intermediates, such as **ethanol**, **acetic acid** and ethylene, and it also affects product distribution. The

enhanced activity of the Pt/TiO₂ (W6+) catalysts is attributed to complementary bifunctional steps occurring on sites offered by Pt metal and by the support. During oxidation of benzene-ethylacetate-water mixts., benzene oxidation is strongly suppressed in the presence of ethylacetate, while water acts as an inhibitor for both VOC oxidation

IT 141-78-6, Ethylacetate, processes

RL: REM (Removal or disposal); PROC (Process)

(tungsten-doped platinum/titania catalysts for combustion of volatile orgs.)

RN 141-78-6 CAPLUS

CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 6 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1996:369616 CAPLUS

DOCUMENT NUMBER: 125:171484

TITLE: Synthesis of C₂ oxygen-containing compounds from carbon monoxide and hydrogen on rhodium-containing heterogeneous catalysts under pressure

AUTHOR(S): Mamedov, A. P.

CORPORATE SOURCE: Aktsionernoe Obshchestvo Vserossiiskii Nauchno-Issledovatel'skii Institut Organicheskogo Sintez, Moscow, Russia

SOURCE: Neftekhimiya (1996), 36(2), 132-141
CODEN: NEFTAH; ISSN: 0028-2421

PUBLISHER: Nauka

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB Rh catalysts for producing **acetic acid**, **ethanol**, and acetaldehyde were tested. The highest activity in the 180-380° temperature range and 2.0-5.0 MPa pressure range was observed for catalysts containing 2.5% Rh supported by wide-porous SiO₂ with a sp. surface area of 30 m²/g. La, Ce, and Re can be used as effective promoters. The most efficient of the catalysts examined were stable for 150 h at 10.0 MPa and 300-330°, yielding 55-65 g/(kg h) of **ethanol** or 60-68 g/(kg h) of O-containing C₂ products.

IT 141-78-6P, Ethyl acetate, preparation

RL: BYP (Byproduct); PREP (Preparation)

(Rh catalysts for conversion of synthesis gas to O-containing C₂ compds.)

RN 141-78-6 CAPLUS

CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

L13 ANSWER 7 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1996:348201 CAPLUS

DOCUMENT NUMBER: 125:86009

TITLE: On the mechanism of carbonylation in **acetic acid** and higher acid synthesis from methanol and syngas mixtures on supported rhodium catalysts.

AUTHOR(S): Chateau, L.; Hindermann, J. P.; Kiennemann, A.; Tempesti, E.

CORPORATE SOURCE: LERCSI-EHICS-URA CNRS 1498, 1, rue Blaise Pascal, Strasbourg, 67000, Fr.

SOURCE: Journal of Molecular Catalysis A: Chemical (1996), 107(1-3), 367-378

CODEN: JMCCF2; ISSN: 1381-1169

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB In high pressure gas phase conditions, methanol and syngas mixts. can be converted to acetic and higher carboxylic (C3-C5) acids on supported rhodium catalysts in presence of Me iodide. Chemical trapping and FTIR spectroscopic studies show that two mechanisms are involved in the carboxylic acid formation. One is the conventional carbon monoxide insertion model on the rhodium part of the **catalyst**. The second proceeds through the isomerization of Me formate on the support. On the support alone the chain growth stops at the C2-intermediate since no rhodium is present to convert **acetic acid** or Me acetate to **ethanol** or ethoxy species.

IT 141-78-6P, Ethyl acetate, reactions

RL: BYP (Byproduct); PEP (Physical, engineering or chemical process); RCT (Reactant); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)

(mechanism of carbonylation in **acetic acid** and higher acid synthesis from methanol and syngas mixts. on supported rhodium catalysts.)

RN 141-78-6 CAPLUS

CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

L13 ANSWER 8 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1995:488078 CAPLUS

DOCUMENT NUMBER: 122:239191

TITLE: Process and catalysts for the carbonylation-transesterification preparation of acetate esters from methanol

INVENTOR(S): Uhm, Sung Jin; Han, Sung Hwan; Oh, Jun Woo; Joo, Oh Shim; Jung, Kwang Deog; Lee, Moon Sang

PATENT ASSIGNEE(S): Korea Institute of Science and Technology, S. Korea

SOURCE: Eur. Pat. Appl., 16 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-----------------------|------|----------|-----------------|--------------|
| EP 640583 | A2 | 19950301 | EP 1994-111650 | 19940726 <-- |
| EP 640583 | A3 | 19950802 | | |
| EP 640583 | B1 | 20000216 | | |
| R: DE, ES, FR, GB, IT | | | | |
| KR 9606546 | B1 | 19960517 | KR 1993-14392 | 19930728 <-- |
| ES 2144472 | T3 | 20000616 | ES 1994-111650 | 19940726 |
| US 5430178 | A | 19950704 | US 1994-281187 | 19940727 <-- |
| JP 07149691 | A2 | 19950613 | JP 1994-176537 | 19940728 <-- |
| JP 2807176 | B2 | 19981008 | | |

PRIORITY APPLN. INFO.: KR 1993-14392 A 19930728

OTHER SOURCE(S): CASREACT 122:239191; MARPAT 122:239191

AB Acetate esters are economically produced by the gas-phase carbonylation of MeOH with CO followed by transesterification in a process comprising: (a) carbonylating MeOH with CO to produce a mixture of AcOH (I) and MeOAc (II), (b) separating from the production mixture the I and a mixture of the II and cocatalyst, (c) further separating I and the cocatalyst and recycling the separated cocatalyst to the carbonylation reactor, (d) introducing the separated II into a lower region of a transesterification reactor at a temperature above its b.p., (e) introducing a C₂ alc. (e.g., EtOH, iso-PrOH, BuOH, etc.) into an upper region of the transesterification reactor at a temperature up to its b.p., (f) transesterifying the II with the alc. in the presence of an acid **catalyst** to produce a mixture containing acetate esters, and (g) recovering the acetate esters from the mixture as a bottoms product while recycling the unreacted II and MeOH to the carbonylation reactor or distillation

column. A process flow diagram is presented.
IT 141-78-6P, Ethyl acetate, preparation
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP
(Preparation)
(process and catalysts for the carbonylation-transesterification preparation
of acetate esters)
RN 141-78-6 CAPLUS
CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

L13 ANSWER 9 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1993:41199 CAPLUS
DOCUMENT NUMBER: 118:41199
TITLE: Preparation and pretreatment of a palladium-based
catalyst for preparation of ethyl acetate
INVENTOR(S): Ramos, Ruth Mara Souza; Libergott, Esther Kerdman;
Appel, Lucia Gorenstin; De Carvalho, Sonia Elisa;
Castro de Almeida, Valeria
PATENT ASSIGNEE(S): Instituto Nacional de Tecnologia, Brazil
SOURCE: Braz. Pedido PI, 17 pp.
CODEN: BPXXDX
DOCUMENT TYPE: Patent
LANGUAGE: Portuguese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|--------------|
| BR 9104562 | A | 19920616 | BR 1991-4562 | 19911022 <-- |
| PRIORITY APPLN. INFO.: | | | BR 1991-4562 | 19911022 |

AB A 0.1-2.5% Pd/SiO₂ catalyst for EtOAc manufacture is prepared by ion exchange of SiO₂ with an alkaline solution of Pd(NH₃)₄Cl₂, followed by washing to neutrality, drying at 60°, cooling, heating at a rate of 1.0-5.0°C/min, and oxidation of the catalyst with O₂ (flow of 20-30 mL/min) at 400° for 6 h. The catalyst is used to convert EtOH to EtOAc at 70-170°, atmospheric pressure, GHSV of 4000-10,000 h⁻¹, and mol ratio EtOH/air of 0.02-0.03. Yields of approx. 30% and EtOAc selectivity of 65% were obtained at approx. 120°, with the ratio of EtOH to air being held below the inflammability limit. Selectivity for C₂H₄ increased with temperature, whereas those for MeCHO and AcOH reached min. near 150° and 100°, resp. (6 graphs given).

IT 141-78-6P, Ethyl acetate, preparation
RL: PREP (Preparation)
(manufacture of, by oxidation of ethanol, palladium catalyst
for)
RN 141-78-6 CAPLUS
CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

L13 ANSWER 10 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1991:635167 CAPLUS
DOCUMENT NUMBER: 115:235167
TITLE: Reforming of ethanol - dehydrogenation to
ethyl acetate and steam reforming to acetic
acid over copper-based catalysts
AUTHOR(S): Iwasa, Nobuhiro; Takezawa, Nobutsune
CORPORATE SOURCE: Dep. Chem. Process Eng., Hokkaido Univ., Sapporo, 060,
Japan
SOURCE: Bulletin of the Chemical Society of Japan (

1991), 64(9), 2619-23
CODEN: BCSJA8; ISSN: 0009-2673

DOCUMENT TYPE: Journal
LANGUAGE: English

AB The title reactions were carried out over Cu-based catalysts (Cu, Cu/SiO₂, Cu/ZrO₂, Cu/Al₂O₃, Cu/MgO, and Cu/ZnO). The selectivities to AcOEt and AcOH markedly depended on the supports used. AcH was formed by dehydrogenation of EtOH and transformed to either AcOEt or AcOH via nucleophilic addition of EtOH (or EtO ions) or H₂O (or OH ions) to AcH. The rates of the transformation steps to EtOAc and AcOH depended on the kinds of supports used. The transformation steps proceeded slowly compared with the dehydrogenation step.

IT 141-78-6P, Ethyl acetate, preparation

RL: IMF (Industrial manufacture); **PREP (Preparation)**
(preparation of, by catalytic conversion of **ethanol**, effect of **catalyst** supports on selectivity of)

RN 141-78-6 CAPLUS

CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

L13 ANSWER 11 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1991:26126 CAPLUS

DOCUMENT NUMBER: 114:26126

TITLE: Preparations and catalytic properties of single, pair, and monolayer niobium catalysts

AUTHOR(S): Shirai, M.; Ichikuni, N.; Asakura, K.; Iwasawa, Y.

CORPORATE SOURCE: Fac. Sci., Univ. Tokyo, Tokyo, 113, Japan

SOURCE: Catalysis Today (1990), 8(1), 57-66

CODEN: CATTEA; ISSN: 0920-5861

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The title catalysts involving single, pair, and monolayer Nb sites were prepared by the reaction between surface OH groups of SiO₂ and Nb(η^3 -C₃H₅)₄, [Nb(η^5 -C₅H₅)H- μ -(η^5 , η^1 -C₅H₄)]₂, and Nb(OEt)₅, resp. The obtained Nb sites were attached to the surface through O atoms, showing Nb-Si bonds besides Nb-O bonds as proved by extended x-ray absorption fine structure. The Nb monomers on SiO₂ were active for EtOH dehydrogenation which proceeded on Nb=O bonds with basic character, while the Nb dimers showed dehydration activity to form C₂H₄ and Et₂O, based on acidic character. The Nb monolayers on SiO₂ produced EtOAc from EtOH. The monolayer **catalyst** also showed a high activity for the formation of EtOAc from EtOH and AcOH. The Nb atoms were suggested to be nearly uniformly supported in a monolayer-growth mode, where the Nb sites showed the Lewis acidic properties available for the catalytic esterification.

IT 141-78-6P, Ethyl acetate, preparation

RL: IMF (Industrial manufacture); **PREP (Preparation)**
(preparation of, from **ethanol** and **acetic acid**,
niobium-silica esterification catalysts for)

RN 141-78-6 CAPLUS

CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

L13 ANSWER 12 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1985:424081 CAPLUS

DOCUMENT NUMBER: 103:24081

TITLE: Oxygen-containing compounds

PATENT ASSIGNEE(S): Agency of Industrial Sciences and Technology, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------|------|----------|-----------------|--------------|
| JP 60032725 | A2 | 19850219 | JP 1983-141090 | 19830803 <-- |
| JP 61014128 | B4 | 19860417 | | |

PRIORITY APPLN. INFO.: JP 1983-141090 19830803

AB O-containing compds. are prepared by the reaction of CO with H in the presence of catalysts comprising Rh, U, and/or Fe as well as Ir, Os, Li, Na, K, or Co. Body thus, a mixture of 2.29 g UO₂(NO₃)2.6H₂O and 10 g **silica** gel in EtOH [64-17-5] was dried in vacuum, calcined in air overnight at 500°, added to a mixture of RhCl₃.3H₂O 1.2, IrCl₄.H₂O 0.322, and FeCl₃.6H₂O 0.37 g in EtOH, dried, and treated with 40 mL/min H and 20 mL/min N during 16 h at .apprx.400° to prepare a **catalyst**. A 1:2 (molar) CO-H mixture was passed over 10 mL of the **catalyst** (containing 30 mL SiO₂, pretreated with 200 mL/min H at 300°) at 275°, 51 kg/cm², and hourly space velocity 12,000 to give MeOH [67-56-1], AcH [75-07-0], EtOH, AcOMe [79-20-9], and AcOEt [141-78-6] with 5.2, 1.6, 41.4, 2.5, and 7.6% selectivity, resp. The conversion of CO was 10.5%.

IT **141-78-6P**, preparation
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(manufacture of, from synthesis gas, catalysts for)
RN 141-78-6 CAPLUS
CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac

L13 ANSWER 13 OF 13 CAPLUS COPYRIGHT 2005 ACS on STM

ACCESSION NUMBER: 1981:46729 CAPLUS

DOCUMENT NUMBER: 94:46729

TITLE: Use of aluminum phosphates in the esterification of **acetic acid** with **ethanol** in the gas phase using the pulse microreactor technique

AUTHOR(S): Vara, E.; Saura Calixto, F.; Marinas, J. M.
CORPORATE SOURCE: Fac. Cienc., Palma de Mallorca, Mallorca, Spain
SOURCE: Afinidad (1980), 37(368), 327-31
CODEN: AFINAE; ISSN: 0001-9704

DOCUMENT TYPE: Journal

LANGUAGE: Spanish

AB The esterification of HOAc with EtOH is examined in the gas phase on a pulse microreactor over Kearby type AlPO₄/SiO₂ and AlPO₄/Al₂O₃ catalysts which are prepared in aqueous medium, using NH₄OH as precipitating agent and whose chemical and texture characteristics are determined The reaction conditions are optimized.

IT **141-78-6P**, preparation
RL: **PREP (Preparation)**
(from catalytic esterification of **ethanol** with **acetic acid** in pulsed microreactor)

RN 141-78-6 CAPLUS

CN Acetic acid ethyl ester (8CI, 9CI) (CA INDEX NAME)

Et-O-Ac